ABSTRACT OF DISCLOSURE

A three-dimensional visual sensor which measures the three-dimensional position and orientation of an objective workpiece accurately even when the position and orientation thereof varies. The position Ca, tilting angle θa and size S of a first region A which includes a characteristic part of an objective workpiece, and the position Cb and radius Rb of a second region B which is a target region of measurement are determined in a two-dimensional image of a representative objective workpiece captured from a predetermined position, and stored as reference information. An image of a to-be-measured objective workpiece is captured, and in the image, a region corresponding to the second region is determined on the basis of the position C'a, tilting angle θ'a and size S' of a region corresponding to the first region A, and the reference information. The position and orientation of the objective workpiece is obtained by measuring the region determined as corresponding to the second region.